

FILE 'HOME' ENTERED AT 14:08:38 ON 17 SEP 2002

FILE 'BIOSIS, MEDLINE, INPADOC, CAPLUS' ENTERED AT 14:08:50 ON 17 SEP 2002

FILE 'REGISTRY' ENTERED AT 14:08:57 ON 17 SEP 2002

L1 1 AZADIRACTIN/CN

FILE 'BIOSIS, MEDLINE, INPADOC, CAPLUS' ENTERED AT 14:09:25 ON 17 SEP 2002

L2 1402 L1

L3 1076827 NATURAL?

L4 147 L1 AND NATURAL?

L5 213 L1 AND EXTRACT?

L6 180 DUPLICATE REMOVE L5 (38 DUPLICATES REMOVED)

L7 0 AZADIRACTIN AND (SAPONARIA OR QUILLAJA OR CHLOROGALUM OR SAPIN

L8 1691 AZADIRACTIN

L9 1792 L2 OR L3

L10 9 L9 AND (SAPONIN OR SAPOGENIN)

L11 6 DUPLICATE REMOVE L10 (2 DUPLICATES REMOVED)

L12 3 L9 AND LECITHIN

L13 16 L9 AND (TRITON? OR TWEEN? OR BRIJ? OR SPAN?)

L14 11 DUPLICATE REMOVE L13 (5 DUPLICATES REMOVED)

=>

LI ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS  
 RN 11141-17 6 REGISTRY  
 CN 1H,7H-Naphtho[1,8-bc:4,4a-c']difuran-5,10a 8H-dicarboxylic acid,  
 10-(acetyloxy-octahydro-3,5-dihydroxy-4-methyl-8-[[2E-2-methyl-1-oxo-2-  
 butenyl]oxy]-4-[[1aR,2S,3aS,6aS,7S,7aS-3a,6a,7,7a-tetrahydro-6a-hydroxy-  
 7a-methyl-2,7-methanofuro[2,3-b]oxireno[e]oxepin-1a(2H-yl)]-), dimethyl  
 ester, [2aR,3S,4S,4aR,5S,7aS,8S,10P,10aS,10bP]-9CI CA INDEX NAME  
 OTHER CA INDEX NAMES:  
 CN 1H,7H-Naphtho[1,8-bc:4,4a-c']difuran-5,10a 8H-dicarboxylic acid,  
 10-(acetyloxy-octahydro-3,5-dihydroxy-4-methyl-8-[[2-methyl-1-oxo-2-  
 butenyl]oxy]-4-[[3a,6a,7,7a-tetrahydro-6a-hydroxy-7a-methyl-2,7-  
 methanofuro[2,3-b]oxireno[e]oxepin-1a(2H-yl)]-), dimethyl ester,  
 [2aR-[[2a.alpha.,3.beta.,4.beta.,11aR\*,2S\*,3aS\*,6aS\*,7S\*,7aS\*],4a.beta.,5.alpha.  
 pha.,7aS\*,8.beta.(E),10.beta.,10a.alpha.,10b.beta.]]-  
 CN 2,7-Methanofuro[2,3-b]oxireno[e]oxepin, 1H,7H-naphtho[1,8-bc:4,4a-  
 c']difuran-5,10a(8H)-dicarboxylic acid deriv.  
 OTHER NAMES:  
 CN Align  
 CN **Azadirachtin**  
 CN Azadirachtin A  
 CN Azatin  
 CN Azatin EC  
 CN BioNEEM  
 CN NeemAzal F  
 CN NeemAzal T  
 CN NeemAzal W  
 CN Neemazol  
 CN Neemgold  
 CN Nimbididine  
 CN Suneem  
 CN Superneem  
 FS STEREOSEARCH  
 DR 55890 15-8, 95507-01-0, 61312-38-2  
 MF C35 H44 O16  
 CI COM  
 LC STN Files: AGRICOLA, ANAESTR, AQUIPE, BEILSTEIN\*, BIOBUSINESS, BIOSIS,  
 BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CHEMCATS, CIN,  
 CSCHEM, CSNB, DDFU, DRUGU, DRUGUPDATES, EMBASE, IPA, MEDLINE, MRCK\*,  
 NAPALEFT, PIRA, PROMT, SPECINFO, TOXCENTER, ULIDAT, USPATFULL  
 (\*File contains numerically searchable property data)

Absolute stereochemistry.  
 Double bond geometry as shown.



LG ANSWER 173 OF 180 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
DUPLICATE 32  
AN 1984:091767 BIOSIS  
DN BA78:18247  
TI ESTIMATION OF AZADIRACHTIN CONTENT IN NEEM **EXTRACTS** AND  
FORMULATIONS.  
AU WARTHEN J D JR; STOKES J B; JACOBSON M; KOEEMPEL M F  
CS BIOL. ACTIVE NATURAL PRODUCTS LAB., AGRIC. ENVIRON. QUALITY INST., AGRIC.  
RES. SERV., U.S. DEP. AGRIC., BELTSVILLE, MD. 20705.  
SO J LIQ CHROMATOGR, 1984- 3 , 591-598.  
CODEN: JLCHD8. ISSN: 0148-3919.  
FS BA; OLD  
LA English  
AB A high performance liquid chromatographic reversed-phase procedure was  
developed whereby azadirachtin content can be estimated in crude  
**extracts** of neem [Azadirachta indica] and in dust formulations of  
neem. An estimation of the azadirachtin content is achieved through the  
use of an external azadirachtin standard and valley-to-valley integration.  
Since azadirachtin seems to be the most potent insect feeding deterrent in  
these **extracts** and formulations, its content is a measurement of  
potency and represents an attempt at standardization.

LG ANSWER 166 OF 181 BIOSIS COPYRIGHT 2012 BIOLOGICAL ABSTRACTS INC.  
AN 1986:23658 BIOSIS  
DN BR30:23658  
TI STABLE ANTI-PEST NEEM SEED EXTRACT.  
AU LARSON P O  
CS SHEBOYGAN, WIS., USA.  
ASSIGNEE: WILKWOOD, LTD  
P1 US 4556562 03 Dec 1985  
S0 Off. Gaz. U. S. Pat. Trademark Off., Pat., 1985 1061 1, 265.  
CODEN: CCUPET. ISSN: 0098-1133.  
DT Patent  
FS BR; OLD  
LA English

L6 ANSWER 155 OF 180 CAPLUS COPYRIGHT 2002 ACS

AN 1989:492333 CAPLUS

DN 111:92333

TI Insecticidal hydrogenated neem **extracts**

IN Lident, Dev

PA Rohm and Haas Co., USA

SC Eur. Pat. Appl., 12 pp.

CODEN: EPAMDW

DT Patent

LA English

PAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 311284	A2	19890412	EP 1988-308934	19880927
	EP 311284	A3	19901131		
	EP 311284	B1	19940406		
	E: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	US 4943434	A	19900724	US 1988-240790	19880902
	CA 1300494	A1	19920512	CA 1988-578113	19880922
	AT 133767	E	19940416	AT 1988-308934	19880927
	ES 2063047	T3	19950101	ES 1988-308934	19880927
	BR 8805127	A	19890516	BR 1988-5127	19881105
	JP 01163193	A2	19890627	JP 1988-251708	19881105
	JP 2865206	B2	19990308		
	AU 609526	B2	19910502	AU 1988-23446	19881105
	IL 87930	A1	19920716	IL 1988-87930	19881105
	IN 173449	A	19940907	IN 1988-DE1002	19881117
PRAI	US 1987-106755		19871006		
	US 1988-240790		19880902		
	EP 1988-308934		19880927		

AB Exts. of neem tree (*Azadirachta indica*) are hydrogenated to give hydrogenated azadirachtin, an insecticide. Ethanolic neem and seed ext. was partitioned between 1:1 MeOH-hexane and the MeOH phase was sepd. and the solvent evapd. The residue was partitioned between water and EtOH and the org. phase was sepd. and the solvent evapd. The residue was dissolved in MeOH and hydrogenated over Pd/C to give a product, which was more insecticidal to *Spodoptera eridania* in lab. feeding tests, using lima bean leaves, than was the nonhydrogenated ext.

L6 ANSWER 156 OF 180 BIOSIS COPYRIGHT 2002 BIOLOGI

L6 ANSWER 145 OF 180 BIOSIS COPYRIGHT 1992 BIOLOGICAL ABSTRACTS INC.  
AN 1992:187461 BIOSIS  
DN BA93:98411  
TI POTENTIAL OF MARGOSAN O AN AZADIRACHTIN CONTAINING FORMULATION FROM NEEM  
SEED **EXTRACT** AS A CONTROL AGENT FOR SPRUCE BUDWORM  
CHORISTONEURA-FUMIFERANA.  
AU THOMAS A W; STRUND G M; CHIASSON M; CHAN T H  
CS FORESTRY CANADA MARITIMES REGION, P.O. BOX 4000, FREDERICTON, N.B. E3B  
5P7, CAN.  
SO ENTOMOL EXP APPL, (1992) 62:1, 37-46.  
CODEN: ETEAAT. ISSN: 0013-8703.  
FS BA; OLD  
LA English  
AB The effects on spruce budworm larvae, *Choristoneura fumiferana* (Clem.),  
produced by ingestion of Margosan-O, a commercially available neem seed  
**extract** formulation containing 0.3% azadirachtin, were  
investigated. Bioassays with the test material were conducted using  
various instars of spruce budworm larvae, with either artificial diet, cut  
branches of balsam fir, *Abies balsamea* (L.) Mill., or small growing balsam  
fir trees as substrates. The dose-response data on feeding reduction,  
developmental retardation, and mortality (LC50, LC95, and LD50) suggest  
that Margosan-O has promise as a control agent for spruce budworm in an  
integrated pest management program.

ANSWER 140 OF 180 CAPLUS COPYRIGHT 2000 ACS

AN 1993:75393 CAPLUS  
DN 118:75393  
TI Pesticidal insect repellent from neem seed **extract**  
IN Guerrini, Vincent Henry  
PA Australia  
SO PCT Int. Appl., 13 pp.  
CODEN: PIXXDC  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9219616	A1	19921112	WO 1992-AU200	19920501
	W: AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, PL, RO, RU, SD, SE, US RW: AT, BE, BF, BU, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GN, GR, IT, LU, MC, ML, MR, NL, SE, SN, TD, TG				
	AU 9217409	A1	19921221	AU 1992-17409	19920501
PRAI	AU 1991-5970		19910506		
	WO 1992-AU200		19920501		
AB	A mixt. of 10-350 mL citronella oil, 40-600 mL neem seed ext. (5% azadirachtin content), 0.17-1.16 g triclosan, 30-200 g DEET, 6-46 g di-Pr isocinchomerate, traces of lemon grass oil, and EtOH to 1 L was heated at 54.degree. for 14 days to give a pesticide/insect repellent. During heating, azadirachtin disappeared and new compds. were formed. The compn. comprises i.a. nimbin, nimbinin, meliantriol, azadirachtol, and salannins.				



L6 ANSWER 139 OF 180 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 DUPLICATE 26  
 AN 1993:318495 BIOSIS  
 DN PREVIEW 199396026845  
 TI Biological activity of neem seed kernel **extracts** and synthetic  
 azadirachtin against larvae of *Plutella xylostella* L.  
 AU Verkerke, Robert H. J.; Wright, Denis J. 1  
 OS 1 Dep. Biol., Imperial Coll. Silwood Park, Ascot, Berkshire SL5 7PY UK  
 SO Pesticide Science, 1993 Vol. 37, No. 1, pp. 83-91.  
 ISSN: 0031-613X.  
 DT Article  
 LA English  
 AB The activity of two neem **extracts**, AZT and NEEM-AZAL (containing  
 30 and 3 mg azadirachtin ml<sup>-1</sup> respectively) and synthetic azadirachtin  
 (AZ) against second-instar larvae (L2) of *Plutella xylostella* L. was  
 examined using leaf-dip bioassays. On Chinese cabbage, AZ was  
 significantly (P < 0.05) less toxic (3 to 4-fold; LC-50 0.54 mu-g AZ  
 ml<sup>-1</sup>) than either neem **extract** against a laboratory strain of *P.*  
*xylostella* (FS). The LC-50 values for AZT against the FS and another  
 laboratory strain (Wellcome) were not significantly different on Chinese  
 cabbage. The activity of AZT against the FS and Wellcome strains was  
 similar on Chinese cabbage and Brussels sprout. AZT was significantly less  
 toxic (3-fold) on Brussels sprout against an acylurea-resistant field  
 strain (Sawi) when compared with the FS strain on Chinese cabbage. Larval  
 mortality (at day 13) was found to increase with increasing exposure time  
 of *P. xylostella* (FS) larvae to AZT-treated Chinese cabbage, although  
 there was little difference in mortality between 48 and 120 h exposure.  
 When AZT, NEEM-AZAL and AZ were applied at a dose (1 mu-g AZ ml<sup>-1</sup>) which  
 gave end-point mortalities between 50 and 90% (at day 13), all treatments  
 delayed the development of a proportion of surviving larvae but no  
 morphogenetic abnormalities were observed in larvae which reached  
 pupation. Evidence for antifeedant (reduced weight gain) and repellent  
 effects (choice-chamber) for AZI were observed with L2 *P. xylostella*  
 (Wellcome) on Chinese cabbage. AZT was also shown to have ovicidal  
 activity against *P. xylostella* (Wellcome) at relatively high dose ranges  
 (10-1000 mu-g AZ ml<sup>-1</sup>) as well as some contact activity (FS strain) in  
 topical bioassays. In residual bioassays on glass with adults of the  
 hymenopteran endo-larval parasitoid of *P. xylostella*, *Diadegma semiclausum*  
 (Ichneumonidae), AZT showed little or no activity at rates up to 1000 mu-g  
 AZ ml<sup>-1</sup>. In medium-volume (MV, 200 litre ha<sup>-1</sup>) and ultra-low-volume (c. 1  
 litre ha<sup>-1</sup>) spray bioassays on Brussels sprout, AZT gave 16-92% and  
 89-100% mortality respectively (Wellcome strain) at rates approximating to  
 1-20 g AZ ha<sup>-1</sup>. The residual activity of AZT and NEEM-AZAL against *P.*  
*xylostella* (FS) on Brussels sprout (MV spray) was observed to decrease  
 appreciably after three days, the decline in activity being particularly  
 marked for NEEM-AZAL.

L6 ANSWER 140 OF 180 CAPLUS COPYRIG

AN 1994:156744 CAPLUS  
 DN 110:156744  
 TI Stable **extracts** from neem seeds.  
 IN L. Idert, Zev  
 PA Fohm and Haas Co., USA  
 SO Eur. Pat. Appl., 8 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 581467	A1	19940201	EP 1993-305398	19930709
	EP 581467	B1	19960904		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	US 5391779	A	19950221	US 1992-920237	19920727
	JP 06166628	A2	19940614	JP 1993-153528	19931625
	JP 3283340	B2	20010520		
	AT 142078	E	19960915	AT 1993-305398	19930709
	ES 2091536	T3	19961101	ES 1993-305398	19930709
	CA 2100536	AA	19940128	CA 1993-2100536	19930714
	IL 106333	A1	19970318	IL 1993-106333	19930714
	AU 9341993	A1	19940203	AU 1993-41983	19930715
	AU 674855	B2	19970116		
	ZA 9305227	A	19940308	ZA 1993-5227	19930720
	BR 9302980	A	19940315	BR 1993-2980	19930723
	HU 69146	A2	19950828	HU 1993-2159	19930726
	HU 215786	B	19990201		
	CN 1084354	A	19940330	CN 1993-109144	19930727
	CN 1041839	B	19990203		
PRAI	US 1992-920237	A	19920727		
AB	A stable azadirachtin ext. is prepd. by dissoln. of the crude neem seed ext. in a polar solvent and removal of impurities by pptn. and/or treatment of the ext. with an oxidizing agent. The resulting stable ext., optionally formulated as a wettable powder, is a foliar insecticide. Deoiled neem cake (1,400 kg) was extd. with 7,000 kg MeOH, and the ext. was concd. to 366 kg. The conc. was treated with 596 kg water, filtered, and the filtrate was dild. with 1,080 kg brine and extd. with 571.5 kg Et acetate. The extn. was repeated with 202 kg Et acetate and the combined Et acetate phases were evapd. to give 31 kg conc. This was treated with 27 kg satd. Na2CO3 soln. contg. 5.4 kg 35% H2O2, followed by heating at 55.degree. and phase sepn., to give 12.8 kg ext. contg. 31% azadirachtin.				

Lidert, Dev; Clovis, James Stanley; Overberger, Craig Gilbert

PA Pohn and Haas Co., USA

SO Eur. Pat. Appl., 7 pp.

CODEN: EPXXDW

DT Patent

LA English

PAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
P1	EP 581469	A1	19940202	EP 1993-305400	19930709
	EP 581469	B1	19960904		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	US 5420318	A	19950530	US 1992-920038	19920727
	JP 06167211	A2	19940603	JP 1993-157623	19930628
	AT 142079	E	19960915	AT 1993-305400	19930709
	ES 2091557	T3	19961101	ES 1993-305400	19930709
	CA 2100535	AA	19940103	CA 1993-2100535	19930714
	IL 106334	A1	19970313	IL 1993-106334	19930714
	AU 9341984	A1	19940203	AU 1993-41984	19930715
	AU 674856	B2	19970116		
	ZA 9305229	A	19940221	ZA 1993-5229	19930720
	BR 9302961	A	19940216	BR 1993-2961	19930723
	HU 69148	A2	19950623	HU 1993-2161	19930726
	HU 215780	B	19990201		
	CN 1082051	A	19940216	CN 1993-108025	19930727
	CN 1033328	B	19961120		
PRAI	US 1992-920238		19920727		

AB High purity azadirachtin preps. are obtained by adsorbing aq. solns. of neem seed exts. onto a macroporous polymeric adsorbent, followed by desorption using a solvent. The resulting prepn., optionally formulated, is a foliar insecticide. An aq. neem seed ext. was passed through an Amberlite XAD-16 column. The column was eluted with Et acetate, the eluate treated with a satd. NaHCO<sub>3</sub> soln. and with a small amt. of H<sub>2</sub>O<sub>2</sub>, at 55.degree.. The org. phase was sepd., dried, and filtered. Et acetate was stripped, to give an ext. contg. 40% azadirachtin.

L6 ANSWER 119 OF 180 CAPLUS COPYRIGHT 2002 ACS

L6 ANSWER 117 OF 180 CAPLUS COPYRIGHT 2002 ACS

AN 1995:220439 CAPLUS

DN 122:12514

TI Solvents for co-extraction of azadirachtin and neem oil

IN Roland, Michael Timothy; Elrudin, John Joseph

PA W.P. Grace and Co.-Conn., USA

SO Eur. Pat. Appl., 6 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 617119	A2	19940928	EP 1994-250170	19940317
	EP 617119	A3	19951101		
	EP 617119	B1	20000813		
	R: EE, DE, ES, FR, GB, IT, NL				
	US 5397571	A	19951314	US 1993-36795	19930325
	AU 9456335	A1	19940909	AU 1994-56335	19940224
	AT 677621	B1	19970501		
	ES 2150468	T3	20001201	ES 1994-250170	19940317
	JP 06298614	A2	19941028	JP 1994-07857	19940318
	US 5503837	A	19960402	US 1994-311379	19940923

PRAI US 1993-36795 A 19930325

AB A mixt. of polar and nonpolar solvents (e.g., 615:275 EtOH-hexane mixt.) is used for the simultaneous extn. of a hydrophilic fraction contg. azadirachtin and hydrophobic neem oil from seeds.

L6 ANSWER 118 OF 180 CAPLUS COPYRIGHT 2002 ACS

AN 1994:156718 CAPLUS

DN 120:156718

TI High-purity neem seed extracts.

IN Lidert, Ev; Clovis, James Stanley; Overberger, Craig Gilbert

PA Rohm and Haas Co., USA

SO Eur. Pat. Appl., 7 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 581469	A1	19940202	EP 1993-305400	19930709
	EP 581469	B1	19960904		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	US 5420318	A	19950530	US 1992-021239	19920727
	JP 06157211	A2	19940603	JP 1993-157623	19930629
	AT 142079	E	19960915	AT 1993-305400	19930709
	ES 2091557	T3	19961101	ES 1993-305400	19930709
	CA 2100535	AA	19940128	CA 1993-2100535	19930714
	IL 106334	A1	19970318	IL 1993-106334	19930714
	AU 9341984	A1	19940203	AU 1993-41984	19930715
	AU 674856	B1	19970116		
	ZA 9305229	A	19940221	ZA 1993-5229	19930720
	EE 9302991	A	19940216	EE 1993-2991	19930723
	HU 69148	A2	19950828	HU 1993-2161	19930726
	HU 215780	E	19990201		
	CN 1080051	A	19940216	CN 1993-109025	19930727
	CN 1033318	E	19961120		
PRAI	US 1992 920238		19920727		

AB High purity azadirachtin preps. are obtained by adsorbing aq. solns. of neem seed exts. onto a macroporous polymeric adsorbent, followed by desorption using a solvent. The resulting prep., optionally formulated, is a foliar insecticide. An aq. neem seed ext. was passed through an

Amberlite XAD-16 column. The column was eluted with Et acetate, the eluate treated with a satd.  $\text{NaHCO}_3$  soln. and with a small amt. of  $\text{H}_2\text{O}_2$ , at 55.degree.. The org. phase was sepd., dried, and filtered. Et acetate was stripped, to give an ext. contg. 41% apadivachtin.

L6 ANSWER 110 OF 180 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1995:407168 BIOSIS  
 DN PREV199598421468  
 TI Repellency and toxicity of azadirachtin and neem concentrates to three  
 stored-product beetles.  
 AU Xie, Y. S.; Fields, P. G. 1+; Isman, M. B.  
 CS 1+ Winnipeg Res. Cent., Agric. Agri-Food Canada, 195 Dafoe Road,  
 Winnipeg, MB R3T 2M9 Canada  
 SO Journal of Economic Entomology, 1995 Vol. 88, No. 4, pp. 1024-1031.  
 ISSN: 0022-0493.  
 DT Article  
 LA English  
 AB Repellency and toxicity of azadirachtin (98% AZA, which contains 98%  
 azadirachtin) and 3 neem **extracts** (48, 23, and 7% AZA) to 3  
 stored-product insects, the rusty grain beetle, *Cryptolestes ferrugineus*  
 (Stephens), the rice weevil, *Sitophilus oryzae* (L.), and the red flour  
 beetle, *Tribolium castaneum* (Herbst), were investigated in the laboratory.  
 Each test material repelled all 3 species in a standard repellency test  
 using a food preference apparatus. Significant negative correlations were  
 found between insect settling response and **extract**  
 concentrations. *T. castaneum* was more sensitive to the repellent action of  
 neem than the other 2 species. The test materials were also toxic to the 3  
 pest species, with *C. ferrugineus* being the most susceptible. Six-week  
 LC-50 values for 48, 23, and 7% AZA for *C. ferrugineus* were 18.8, 37.0,  
 and 127.3 ppm, respectively. The F-1 adults of all 3 insect species in  
 almost all treatments were significantly reduced compared with controls.  
 This reduction was significantly dose dependent. The relationship between  
 bioactivity of neem materials and their azadirachtin content was  
 established and is discussed. We confirmed that azadirachtin was largely  
 responsible for both repellent (behavioral) and toxic (physiological)  
 actions of neem on stored-product insects. However, the neem  
**extracts** are slightly more active than pure azadirachtin when  
 applied at equivalent azadirachtin concentrations, indicating that  
 azadirachtin is not the only active compound in neem.

L6 ANSWER 111 OF 180 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACT

LI1 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2000 ACS  
AN 2002:14701 CAPLUS  
DN 136:33318  
TI Preparation of insecticide from plant  
IN Miao, Zhendong  
PA Peop. Rep. China  
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.  
CODEN: CNXXEV  
DT Patent  
LA Chinese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1296753	A	20010530	CN 2000-113939	20000930
AB	The raw material of the insecticide comprises <b>azadirachtin</b> 0.1-90, oxidized matrine 0.1-98, matrine 0.1-98, other plant ext. (tea <b>saponin</b> 0-50, and addnl. adjuvant to 100%. The insecticide is prepd. by extg. plant part, filtering, and mixing. The insecticide can prepd. into different formulations, such as emulsion, suspension, wettable powder, etc. The insecticide is low in toxicity and highly effective.				

L12 ANSWER 1 OF 3 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 AN 1996:436087 BIOSIS  
 DN PREV199699149693  
 TI Photostabilization of the botanical insecticide **azadirachtin** in the presence of **lecithin** as UV protectant.  
 AU Sundaram, K. M. S.; Curry, J.  
 CS Nat. Resources Canada, Canadian Forest Serv., 1219 Queen St. E., PO Box 490, Sault Ste. Marie, ON P6A 5M7 Canada  
 SO Journal of Environmental Science and Health Part B: Pesticides, Food Contaminants, and Agricultural Wastes, 1996, Vol. 31, No. 5, pp. 1041-1061.  
 ISSN: 0360-1234.  
 DT Article  
 LA English  
 AB The phytochemical insecticide, **azadirachtin** (AZ), undergoes UV-induced photodegradation. Using the isomer AZ-A as a standard, its photochemical stability was studied with and without adding **lecithin** surfactant as a UV protectant. Standard solutions of pure AZ-A and Margosan-O were prepared in methanol-hexane with (AZ-A: **lecithin**, 1:2 by weight) and without **lecithin**, applied separately onto glass plates and maple (Acer L.) foliage and exposed to radiant energy under controlled conditions. Noticeable photostabilization of AZ-A was achieved in the samples containing **lecithin** compared to AZ-A samples without the **lecithin** additive. First-order kinetic evaluation of the data showed that the DT-50 (half-life) and C (rate constant) values for AZ-A with and without **lecithin** on glass plates were 5.68 d and 0.123, and 5.42 d and 0.126, respectively. The corresponding values for the Margosan-O formulation were 7.37 d and 0.094, and 6.24 d and 0.111. The DT-50 and C values for the pure AZ-A on maple foliage with and without **lecithin** were 8.77 d and 0.079, and 8.54 d and 0.106, respectively. The corresponding values for the Margosan-O formulation on foliage were 8.35 d and 0.083, and 7.45 d and 0.093. The kinetic data gave quantitative information regarding the photostabilization of AZ-A in the presence of **lecithin**. Good UV protection can only be achieved if the additive has the matching lambda-max of AZ-A. The mechanism of photostabilization of AZ-A in the presence of **lecithin** was due to either energy transfer from the excited AZ-A to **lecithin** and/or competitive absorption of UV photons by the latter.

L12 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS  
 AN 1996:522895 CAPLUS  
 DN 125:214761  
 TI Photostabilization of the botanical insecticide **azadirachtin** in the presence of **lecithin** as UV protectant  
 AU Sundaram, K. M. S.; Curry, J.  
 CS Natural Res. Canada, Canadian Forest Service, Sault Ste. Marie, ON, P6A 5M7, Can.  
 SO Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes (1996), B31(5), 1041-1060  
 CODEN: JPFCD2; ISSN: 0360-1234  
 PB Dekker  
 DT Journal  
 LA English  
 AB The phytochem. insecticide, **azadirachtin** (AZ), undergoes UV-induced photodegradn. Using the isomer AZ-A as a std., its photochem. stability was studied with and without adding **lecithin** surfactant as a UV protectant. Std. solns. of pure AZ A and Margosan O were prepd. in methanol hexane with (AZ-A:lectin, 1:2 by wt. and without **lecithin**, applied sep. onto glass plates and maple (Acer L. foliage and exposed to radiant energy under controlled conditions. Noticeable photostabilization of AZ A was achieved in the samples contg. **lecithin** compared to AZ A samples without the **lecithin**



additive. First-order kinetic evaluation of the data showed that the DT50 half-life and C-rate const. values for AZ-A with and without **lecithin** on glass plates were 5.68 d and 0.122, and 5.42 d and 0.128, resp. The corresponding values for the Margosan C formulation were 7.37 d and 0.094, and 6.24 d and 0.111. The DT50 and C values for the pure AZ-A on maple foliage with and without **lecithin** were 8.77 d and 0.079, and 6.54 d and 0.106, resp. The corresponding values for the Margosan-C formulation on foliage were 8.35 d and 0.083, and 7.48 d and 0.093. The kinetic data gave quant. information regarding the photostabilization of AZ-A in the presence of **lecithin**. Good UV protection can only be achieved if the additive had the matching  $\lambda_{\text{max}}$  of AZ-A. The mechanism of photostabilization of AZ-A in the presence of **lecithin** was due to either energy transfer from the excited AZ-A to **lecithin** and/or competitive absorption of UV photons by the latter.

L12 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS

AN 1991:614811 CAPLUS

DN 119:214811

TI Lipospheres for controlled delivery of pharmaceuticals, pesticides, and fertilizers

IN Domb, Abraham J.; Maniar, Manoj

PA Nova Pharmaceutical Corp., USA

SO PCT Int. Appl., 79 pp.

CIDEN: PIKXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9107171	A1	19910530	WO 1990-US6519	19901108
	W: AU, CA, FI, JP, KR, NO				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	CA 2068216	AA	19910514	CA 1990-2068216	19901108
	CA 2068216	C	19990411		
	AU 6169500	A1	19910613	AU 1991-69500	19901108
	AU 655162	B2	19941206		
	EP 502119	A1	19920909	EP 1991-901106	19901108
	EP 502119	B1	19960131		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 133562	E	19960215	AT 1991-901106	19901108
	ES 2085465	T3	19960611	ES 1991-901106	19901108
	ZA 9009098	A	19910731	ZA 1990-9098	19901113
	US 5188837	A	19930223	US 1991-770706	19911003
	JP 05505338	T2	19930812	JP 1991-901460	19911219
	JP 0233402	E2	20111126		
	US 5227165	A	19930713	US 1992-826218	19920122
	US 5221535	A	19930622	US 1992-826215	19920123
	US 5340588	A	19940823	US 1992-825287	19920123
PRA1	US 1989-435546	A	19891113		
	US 1990-607542	E1	19901108		
	US 1990-607543	B1	19901108		
	WO 1990-US6519	A	19901108		

AB Solid, water-insol. lipospheres are prepd. which contain drugs such as vaccines and anesthetics, also other biol. active agents such as insecticides and repellents, fertilizers, and pesticides. The controlled-release lipospheres have several advantages. They include emulsions, vesicles, which are stable for an extended period. A mixt. of lidocaine, tristearin and **lecithin** with a buffer soln. was shaken vigorously, immediately cooled, and immersed in a dry ice acetone bath to give lipospheres contg. lidocaine. The wide uses of the lipospheres are shown.

L14 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 1994:156745 CAPLUS

DN 120:156745

TI Storage-stable high-azadirachtin solution.

IN Walter, James F.

PA Grace, W. P., and Co., USA

SO U.S., 5 pp.

CODEN: USAXAM

DT Patent

LA English

PAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5281618	A	19940125	US 1992-948195	19920921
	AU 9344694	A1	19940331	AU 1993-44694	19930818
	AU 671286	B2	19960821		
	CA 2104483	AA	19940321	CA 1993-2104483	19930820
	EP 589547	A1	19940330	EP 1993-250249	19930913
	R: BE, DE, DK, ES, FR, GB, IT, NL, PT, SE				
	JP 06199617	A2	19940719	JP 1993-252159	19930916
FRAI	US 1992-948195		19920921		

AB Storage-stable compns. comprise neem seed exts., which contain **azadirachtin** (I) pesticide. The compns. comprise nondegrading solvent systems and >10 g I/L.. The solvent systems comprise >50% by vol. aprotic solvents or alcs. and <15% water. Neem seeds (300 lb) were deoiled with 2,000 lb hexane, and I was extd. from the residue with Et acetate. Solvent evapn. gave a conc. contg. 8% I, which was formulated with PABA 1, **Tween** 20, Pr acetate 32, and Me Et ketone 3%.

L14 ANSWER 9 OF 11 BICIS COPYRIGHT 20

4

AN 1996:330859 BIOSIS  
DN PREV199699053215  
TI A method to test compounds for feeding deterrence towards redlegged earth mite (Acarina: Penthaeleidae).  
AU Ridsdill-Smith, T. J. 1 ; Jiang, Y.; Chisalberti, E. L.  
CS 1 CSIRO Div. Entomol., Private Bag, Wembley, WA 6014 Australia  
SO Annals of Applied Biology, 1996- Vol. 127, No. 3, pp. 593-600.  
ISSN: 0033-4746.  
DT Article  
LA English  
AB A bioassay, based on a membrane sachet technique, has been developed to identify antifeeding compounds affecting the redlegged earth mite, *Halotydeus destructor* (Acar: Penthaeleidae). The method consists of counting *H. destructor* numbers on membrane sachets in choice experiments, which was quicker and more efficient than weighing the mites. Five per cent aqueous glucose solution was used as a feeding stimulant, with **Tween 80** at 5% concentration as a solubilizing agent for water-insoluble compounds. (+)-Catechin, rutin, biochanin A, formononetin, chlorogenic acid, and gramine acted as feeding deterrents at 1% concentration. Quercetin (1%) and **azadirachtin** (100 ppm) had no significant effect. At lower concentrations (0.01%), compounds showed antifeeding (gramine), phagostimulating (quercetin and chlorogenic acid), or no effects on mite numbers. Dose-dependent deterrent effects of plant extracts were demonstrated with the bioassay, which could be used for other mites.

L14 ANSWER 5 OF 11 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.DUPLICATE  
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AN 1999:87303 BIOSIS

DN PREV199900087303

TI Enhanced secretion of **azadirachtin** by permeabilized margosa  
*Azadirachta indica* cells.

AU Kuruville, T.; Komarajah, P.; Ramakrishna, S. N. 1

CS (1) Biochemical Environ. Engineering Lab., Indian Inst. Chemical  
Technology, Hyderabad 500 007 India

SO Indian Journal of Experimental Biology, Jan., 1999 Vol. 37, No. 1, pp.  
89-91.

ISSN: 0019-5189.

DT Article

LA English

AB Role of permeabilizing agents on secretion of **Azadirachtin** from  
margosa callus cultures was investigated under laboratory conditions. The  
results indicated that most of the synthesised **azadirachtin**  
remains inside the cells. Different permeabilizers showed variation in  
secretion pattern. The most effective was found to be **Triton**  
X-100, which secreted 10 mg/l at 150 ppm level followed by DMSO and  
chitosan. This is the first report of its nature on permeabilizing agent  
induced enhanced secretion of **azadirachtin** from neem callus  
cultures.

L14 ANSWER 6 OF 11 BIOSIS COPYRIGHT 2002 BIO